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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,148	02/17/2004	Kikuo Kaise	09792909-5801	3748
26263	7590	12/15/2005	EXAMINER	
SONNENSCHEIN NATH & ROSENTHAL LLP			TRAN, BINH X	
P.O. BOX 061080			ART UNIT	PAPER NUMBER
WACKER DRIVE STATION, SEARS TOWER				1765
CHICAGO, IL 60606-1080				

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/780,148	KAISE ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Binh X. Tran	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 17 February 2004.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-9 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 9 is/are allowed.  
 6) Claim(s) 1-8 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 17 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date: _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

2. Claims 1, 5-6, 8 are objected to because of the following informalities: In line 9 of claim 1, and line 3 of claims 5-6, lines 3 and 8 of claim 8, the phrase "a microlens" (emphasis added) appears to have improper grammar. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hawkins et al. (US 5,734,190).

Respect to claim 1, Hawkins discloses a method for manufacturing a microlens substrate comprising the steps of:

forming a lens-shaped curved (120) at a surface side of a transparent substrate (100) (Fig 4C, col. 5 lines 9-12 and lines 36-45);

forming an inorganic material film (130) on the transparent substrate (100) so as to bury said curved therewith (Fig 4D, col. 5 lines 50-60);

planarizing the surface of said inorganic material film (130) to provide microlens where said curve is buried with the inorganic material film (Fig 4E, col. 5 lines 60-67).

Respect to claim 3, Hawkins further disclose the step of: forming a mask pattern on the transparent substrate (100) and forming said lens-shaped curve (120) at the surface side of the transparent substrate (100) by isotropic etching from the mask pattern (Fig 4C, col. 5 lines 36-45). Respect to claim 4, Hawkins discloses the inorganic material is tantalum oxide (aka  $Ta_2O_5$ , See col. 5 lines 53-57). Respect to claim 5, Hawkins discloses after the step of planarizing the inorganic material film to provide microlens, depositing a cover film having a given thickness is formed on said inorganic material (See Fig 7A-7B).

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkins in view of Yamamoto (US 2004/0082096).

Respect to claim 2, Hawkins discloses that lens-shaped curved is forming by using mask and transfer the pattern of the mask using a dry etching process (Fig 4C, col. 36-45). However, Hawkins fails to disclose the step of forming a lens-shaped curve at the surface side of the resist and transferring said lens shape form the resist film to the substrate by dry etching process. In a method for making microlens, Yamamoto discloses the step of forming a lens-shaped curve at the surface side of the resist (307) and transferring said lens shape form the resist film to the substrate by dry etching process (Fig 4, Fig 6-7, paragraph 0022-0024). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Hawkins in view of Yamamoto by forming a lens-shape curve in the resist and transfer the pattern to the substrate because it is easier to control the space between the microlens using a resist pattern as a mask.

8. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawkins in view of Nagasako (US 2001/0026346 A1).

Respect to claim 6, Hawkins fails to disclose the step of forming a thin film transistor (TFT) on the inorganic film at a position corresponding to a peripheral of the microlens. In a method for making liquid crystal device, Nagasako teaches to form a thin film transistor (TFT) on the inorganic film at a position corresponding to a peripheral of the microlens (3) (See 1A, 4A, Fig 5, paragraph 0006-0007, 0029-0030). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Hawkins in view of Nagasako by forming a TFT on the microlens because this structure will create a liquid crystal displace device.

Respect to claim 7, Hawkins teaches to form filter elements (150a, 150b, 150c) on the inorganic material film (130) at the position corresponding to a peripheral portion of the microlens before planarizing step (See Fig 7) (Note: the filter elements read on the limitation of "light shielding pattern").

Most of the limitations of claim 8 have been discussed above. Claim 8 differs from Hawkins by further disclosing the step of placing a counter substrate in face-to-face relation with the microlens substrate at a thin film transistor-formed side thereof, and sealedly filling a liquid crystal layer between of microlens substrate and counter substrate. Nagasako discloses the step of placing a counter substrate (2) in face to face relation with the microlens substrate (4) at thin film transistor-formed side thereof and sealedly filling a liquid crystal layer (9) between the microlens substrate (4) and counter substrate (2). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Hawkins in view of Nagasako by placing a counter

substrate and filling the liquid crystal layer between two substrates because this will protect the picture element and the microlens structure of the liquid crystal device.

***Allowable Subject Matter***

9. Claim 9 is allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: The cited prior art fails to disclose or suggest the step of sealedly filling a liquid crystal layer between said first microlens substrate and said second microlens substrate in conjunction with all other limitations in the claim.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Binh Tran*

Binh X. Tran